

4 DEC 1975

Ampex Corporation
1020 Kifer Road
Sunnyvale, California

Attn: Victor Ragosine

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1. You are herewith advised that the Government considers that performance by Ampex under Contract [] and Contract [] is unsatisfactory and not in accordance with contract performance requirements. Specific items of concern which indicate failure to make adequate progress or to perform in such a manner as to indicate any likelihood of successful completion of the Contracts within the required timeframe include the following:

a. The first item concerns your failure to pass the Redwood City Preshipment Acceptance Test (PSAT) held during the period from 19 November 1975 to 25 November 1975. We are taking this opportunity to officially advise you of this failure. The Government considers the PSAT failure to be of such significance that the probability of your successful completion of the TMS-2 Program within the contractually required timeframe is extremely low. While the nature of some of the individual failures were not too significant from an overall program viewpoint, these failures are significant in that they have occurred after more than two years of development effort. The general pattern of failures of both hardware and software when combined with two especially serious types of failures establishes the fact you are failing to make adequate progress so as to endanger performance under the aforementioned Contracts.

These two serious failures are the inability of the Mass Storage System to move some files from disk to TBM tape and the inability of the system to move some files from the TBM tape to disk. The specification and the system design assume the latter problem will occur once for each 3.75 billion characters of data. The test results showed a rate of 25 occurrences for each 3.75 billion characters. It is estimated that this error rate could result in a loss of at least 70 files every day based on our current system environment.

b. The Government is also concerned over a series of problems that were discovered at the October Management Review Meeting. Our greatest concern is that the current design appears to deviate from the contract specifications. These problems are summarized below:

There is an inability to concurrently access individual Transport Drivers from both Storage Control Processors;

The stated maximum hardware configuration of 6 Transport Drivers, 64 Tape Transports, 3 Data Channels, and 6 External Data Channel Processors does not have a "perfect switching" capability;

A Storage Control Processor requires a dedicated disk controller to access the Mass Storage System's private files;

Functions are not split and/or shared between the two Storage Control Processors.

c. Another area of concern is your apparent inability to judge the extent of your accomplishments and to estimate future schedules. The original September 1975 date for the Redwood City PSAT indicated that in June 1975, just three months prior to the event, AMPEX management was unaware of the status of its mass storage system from the view of both hardware and software. Three weeks before the September test was to start, AMPEX rescheduled the test to start in mid-November. Although the test was held in accordance with Ampex's revised schedule, the system was not ready for testing. Events have proven that in June 1975 AMPEX could not predict

what the state of the system would be just three months later. Then in August with the benefit of additional time AMPEX was still unable to correctly project a realistic schedule for the same events. Because of your record in scheduling, the Government now has serious doubts about the validity of your overall schedule projections.

2. While this communication should not be construed as a formal cure notice in accordance with the termination provisions of the aforementioned Contracts, you are hereby put on notice that termination for default action is seriously being considered by the Government. In view of the magnitude of the problems discussed herein, the Government considers that the routine monthly management meeting presently scheduled for 11 December 1975 is inappropriate. Instead, AMPEX management should be prepared to discuss the current status of the TMS-2 Project in terms of this message. Contractor representatives should be prepared to discuss their failure to make progress in the prosecution of the work under the Contracts such that performance is endangered, the reasons for their failure to make adequate progress, and any possible plans for correcting such failure.

3. The Government proposes that a meeting with AMPEX be held at its Washington, D. C., location as soon as possible but no later than 18 December 1975 to discuss this matter. Please contact [redacted] to establish the date and time for our meeting.

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Contracting Officer

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| OFFICIAL ROUTING SLIP | | | | | |
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| ACTION | | DIRECT REPLY | | PREPARE REPLY | |
| APPROVAL | | DISPATCH | | RECOMMENDATION | |
| COMMENT | | FILE | | RETURN | |
| CONCURRENCE | | INFORMATION | | SIGNATURE | |
| Remarks: <p>The attached communication is distributed to you for your information and retention. It was TWX'ed to Ampex on 5 December. Copies have also been mailed via registered mail receipt required on this same date.</p> <div style="border: 1px solid black; width: 150px; height: 20px; margin: 10px auto;"></div> <p>PS The communication has been reviewed and approved by DD/A, ADD/A, and by Director, OJCS. Also attached is a tentative action plan for future actions on this matter.</p> | | | | | |
| FOLD HERE TO RETURN TO SENDER | | | | | |
| FROM: NAME, ADDRESS AND PHONE NO. | | | | | DATE |
| C/PMS/OL | | | | | |
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FORM NO.
1-67

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Use previous editions

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4 December 1975

Contract Milestones

Redwood City Preshipment Acceptance Test (PSAT)

Amendment five of Contract [] stated that the Redwood City PSAT would be held in September 1975. During the last week of August, AMPEX informally notified the Agency that they would like to delay the test until mid-November 1975. The Agency was notified in writing of this slippage via the monthly progress packet which was submitted the first week in September. The reason given for this delay was simply that AMPEX was not yet ready for the test. This in spite of their claim in AMPEX letter TMS-2/041 dated 3 July 1975 that all of the software functions to be tested were already complete.

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The PSAT was held as scheduled in mid-November. AMPEX failed to pass it. There were serious hardware problems and many software deficiencies. In view of the many basic system failures, it was obvious that the system was not ready for testing. AMPEX personnel admitted they were not ready for the test. The day before the test was to start, the AMPEX project manager asked that the test not be called PSAT and instead it be treated as a joint exercise by AMPEX and the Agency to determine the status of the system. This offer was turned down and it was left to AMPEX to again reschedule the test or to continue as scheduled. AMPEX chose to continue knowing full well the PSAT would fail. Afterwards they said that they could not by themselves generate the discipline necessary to test their system. It should be noted that AMPEX established an Integration and Test Group in September for this very purpose.

The Redwood City PSAT is concerned with the testing of the basic system functions. Essentially it determines if a set of files can be transferred between the mass storage media (tape) and disks. In addition to the transfer of files, other functions such as recording the files status and locations are tested. If the test had been completed successfully, it would have proved that the mass storage system

can provide a minimum capability in a laboratory-like environment. The failure of the test reveals a low level of competency on the part of AMPEX and also a low probability that the system will ever be successfully completed. This last statement should be considered in view of the fact that AMPEX has already spent a total of two years and five months on the project.

The original schedule of the Redwood City PSAT in September indicates that in June 1975, AMPEX management was unaware of the status of its mass storage system, from the view of both hardware and software. Three weeks before the September test was to start, AMPEX rescheduled the test to start in mid-November. It is apparent that when this delay in the schedule was introduced, again AMPEX did not know the system status and made a poor estimate of when they would be ready.

Events have proven that in June 1975 AMPEX could not predict the state of the mass storage system just three months in advance. Then in August with the benefit of additional time AMPEX was still unable to correctly project a schedule for the same event.

Sunnyvale Preshipment Acceptance Test

The Sunnyvale PSAT was originally scheduled for October 1975. In September the test was rescheduled to December 1975. In November the test was tentatively scheduled for February or March 1976. AMPEX is expected to give a more definitive schedule at the next review meeting which will be 11 December 1975.

The Sunnyvale PSAT cannot be held until the Redwood City PSAT has been successful. The description of the Sunnyvale PSAT in contract [] states that the recovery STAT function will be tested. The current schedule predicts the last recovery function will be complete in April, therefore if AMPEX performs even as they predict, the PSAT cannot possibly start before May 1976.

The Sunnyvale PSAT will test the hardware that AMPEX expects to ship to headquarters and also the system function. At this date we have not yet submitted a test plan to AMPEX.

Hardware Shipment

The shipment of the mass storage hardware to headquarters was originally scheduled for November 1975. In August 1975 this schedule was changed to January 1976. In October 1975 the schedule was changed again to March 1976. When AMPEX made these revisions to the shipping schedule the Agency did not argue against them. Our reasoning was that the presence of the hardware on the West Coast was necessary for the success of the software development effort. There has never been any indication by AMPEX that shipment would have to be delayed because of problems with the hardware. We were told by AMPEX personnel at the Redwood City PSAT that the hardware is not complete. The tally track feature has not yet been successfully incorporated.

The hardware cannot be shipped until the Sunnyvale PSAT has been successful.

Software Installation, Initial

The initial software was scheduled for installation at Headquarters in November 1975. This schedule was made in June 1975, three months later in September 1975 this event was rescheduled by AMPEX from November 1975 to January 1976. In October the event was again rescheduled, this time from January 1976 to April 1976 for an overall slip of five months. The initial software cannot be installed before the hardware is shipped.

Software Installation, Final

The final software was initially scheduled for installation at Headquarters in March 1976. This schedule was made in June 1975, three months later in September 1975 this event was rescheduled by AMPEX from March to June 1976.

Final Acceptance Test (FAT)

In June 1975, the Final Acceptance Test (FAT) was scheduled to begin in mid April 1976 and end the first week in June 1976. In October 1975, the FAT was rescheduled to begin in mid-July and end in mid-August 1976. This represents a slippage of three months and a reduction in the duration of the FAT of two weeks. This new schedule is simply an arbitrary decision on the part of AMPEX management. The schedule is not realistic, the AMPEX project manager has privately admitted that it is not. He says that top AMPEX management will not listen to bad news.

The schedule for the FAT does not make sense at all. AMPEX's own schedules for individual tasks show the last ones will be finished in June, they then allow two weeks for system testing to prepare for the FAT which starts in July. It is normal for systems of the level of complexity of the mass storage system to take six months of testing to prepare for an acceptance test. AMPEX's own experience with the Redwood City PSAT showed that after three months of preparation, the system was still defective and could not perform acceptably. The reader should be reminded that the PSAT involved a much simpler system than the one scheduled for FAT.

In summary, AMPEX can start the FAT as scheduled just as they started the Redwood City PSAT on schedule but their current prediction guarantees failure.

Final Publication

The scheduled date for delivery of the final publications is August 1976. There has been no revision of this schedule. The documentation must be complete before the Final Acceptance Test can be conducted.